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EXAMINER

AHMED, SHEEBA

ART UNIT

PAPER NUMBER

1787

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Amendment

1. Amendments to claims 21 and 34 have been entered in the above-identified application. Claims 1-20 are cancelled. **Claims 21-34 are pending and under consideration.**

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 21-28 and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Hartwell et al. (US 5,106,691).

Harwell et al. disclose a method of coating a substrate surface (***corresponding to the first and/or second surface of the sheet of material of the claimed invention***) wherein the substrate surface is contacted with a surfactant solution comprising a liquid in which at least a first surfactant is dissolved so that an interface is formed between the substrate surface and the surfactant solution under conditions which promote the assembly at the interface of surfactant molecules, such assembled molecules defining a surfactant template for the film to be produced. Finally, the monomer molecules are polymerized to form a polymeric film dimensionally determined by the surfactant interface (***such a method corresponds to the admicellar***

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polymerization of the claimed invention). Such a method may be used to coat the surface of objects having non-planer surfaces or to coat porous objects with an ultra-thin coating (Column 1, lines 18-37 and 55-60). The surfactant is sodium dodecyl sulfate (Column 4, lines 36-40 and the Examples). A suitable monomer is styrene and a suitable initiator is azobisisobutyronitrile or persulfate wherein the reaction is conducted in a heated water bath having a temperature of 60-70°C for 15-20 minutes (Column 5, lines 60-66 and Column 7, lines 23-24). The polymeric film formed is hydrophobic (See claim 1). With regards to the limitation that the voids are disposed between the fibers when the admicellar hydrophobic polymer coating is applied to the surface of the plurality of individual fibers, the Examiner takes the position that such a limitation is inherent in the method and coating taught by Hartwell given that the chemical composition of the materials and the method in which these materials are used as disclosed by Hartwell and the claimed invention are identical. All limitations of claims 21-28 and 31-33 are disclosed in the above reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Hartwell et al. (US 5,106,691).

Harwell et al., as discussed above, disclose an admicellar method of polymerizing a polymeric film on a porous substrate but do not teach that the reaction may be carried out at 60-100°C for 30 to 180 minutes.

However, it would have been obvious to one of ordinary skill in the art to optimize the reaction temperature and the reaction time given that Hartwell et al. teach that the reaction may be carried out until the onset of emulsion formation and bulk polymerization as evidenced by the appearance of cloudiness in the reaction supernatant (Column 8, lines 18-27).

Response to Arguments

4. Applicant's arguments with respect to claims 21-33 have been considered but are moot in view of the new ground(s) of rejection. Furthermore, the Examiner would like to point out that the Declaration submitted on March 19, 2010 has been fully considered and states on the record that the “the ability of admicellar polymerization to modify surfaces while leaving voids present is well-established (Wu et al., AICHEJ. 34:1511- 1517, 1988)” thus further indicating that voids are inherently disposed between fibers when an admicellar hydrophobic polymer coating is applied to the surface of a plurality of individual fibers.

Allowable Subject Matter

5. Claim 34 is allowed.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHEEBA AHMED whose telephone number is (571)272-1504. The examiner can normally be reached on Monday-Friday from 7am to 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sheeba Ahmed/
Primary Examiner, Art Unit 1787